



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,238	11/09/2000	Thomas J. Quigley	1875.132000G	4904

7590 07/27/2005

STERNE, KESSLER, GOLDSTEIN & FOX, PLLC  
1100 New York Avenue, N.W.  
Suite 600  
Washington, DC 20005-3934

EXAMINER

BOAKYE, ALEXANDER O

ART UNIT PAPER NUMBER

2667

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/710,238	<b>Applicant(s)</b> QUIGLEY ET AL.	
	<b>Examiner</b> ALEXANDER BOAKYE	<b>Art Unit</b> 2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-23 is/are allowed.
- 6) ☒ Claim(s) 1,2 and 24 is/are rejected.
- 7) ☒ Claim(s) 3-8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>03/11/2005</u> . | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 24 is rejected under 35 U.S.C. 102(e) as being anticipated by Grimwood et al. (US Patent # 6,353,604).

Regarding Claim 24, Grimwood discloses a remote (cable) modem in a digital communication system, comprising a transmitter for sending (transmitting) ranging signals to a (headend modem controller of a central unit) CMTS to enable CMTS (headend modem) to generate equalization coefficients and to return such equalization coefficients (to the remote modem) (col. 56, lines 35-53; col. 58, line 64 to \*1. 59, line 8; col. 68, lines 18-37) ; a receiver (a computer to monitor downstream messages received by said receiver from said headend modem) to process the equalization coefficients returned (received from) by the CMTS (headend modem) (col. 56, lines 35-53; col. 68, lines 18-37); a source of data (upstream data burst) to be sent (transmitted) to the CMTS (headend modem) (col. 56, line 59; col. 68, lines 18-37); an equalizer (pre-

emphasis filter) that uses (by convolving) the equalization coefficients received (from headend modem) to pre-equalize the data sent to the CMTS (headend modem) (col. 60, lines 46-53; col. 68, lines 18-37).

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gorman et al. (US Patent # 6,137,793) in view of Krasner et al. (US Patent # 6,298,098).

Regarding claim 1, Gorman et al. discloses (figures 1-3) a two-way hybrid fiber-coax cable networks where the cable modem termination system (CMTS) of its head-end can receive signal bursts transmitted on an upstream channel of a cable modem system, and where the CMTS comprises a demodulator for receiving signal bursts (burst receiver 504 of upstream receiver, Figure 5 and col. 15, lines 49-64) on the upstream channel; a media access controller (MAC) that generates for downstream transmission MAP messages that assign time slots (Figs. 10 and 12) in which cable modems may transmit signal bursts on the upstream channel (col. 7, lines 54-56-, col. 11, lines 32-59; col15, lines 58-64-, and col. 21 , lines 19 -66); a transmitter that transmits the MAP messages downstream to the cable modems (col. 14, lines 20-22;

Art Unit: 2667

col. 15, lines 58-64; col. 16, lines 10-24); and a device (FEC Processor 505) connected to the demodulator for sensing cable conditions (RPM 603, monitoring some status activity, col. 17, lines 39-51) on the upstream channel.

Gorman, however, fails to teach the inclusion of idle slots in the MAC generated messages; neither does Gorman et al. teaches the sensing of the cable conditions during the idle slot however, Krasner describes cable data transmission system which utilizes time division multiplexing in a downstream direction from a headend unit to multiple subscribers and a time division multiple access transmission from subscribers to the headend unit, where in the upstream. subscribers send data to the headend in a burst fashion in assigned time slots (col. 1, lines 28-41); further, Krasner et al. teaches a design of TDMA data bursts to contain empty bursts during which no subscriber (CM) transmits; and where during this dead time (idle slot), the burst demodulator measures the background noise power and resets its acquisition threshold based on the average noise measured (col. 2, lines 1-6., col. 5, lines 13-20).

Further, Krasner also teaches computing the noise level during an empty (idle) slot (col. 4, lines 35-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Krasner et al. into the method of Gorman for producing the claimed invention because including the idle (empty) slots that are assigned to no cable modem transmission in the IMAP messages provides for the measurement of the background noise (sensing cable conditions) on the upstream channel during time slots (idle slots) that known to the headend CMTS.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gorman et al. (US Patent # 6,137,793) in view of Krpsner et al. (US Patent # 6,298,098) and further in view of Franks (IEEE TCT, 8/1970).

Claim 2, Krasner discloses the use of notch filter in the burst receiver/demodulator of the headend (col. 4, lines 15-23); further, Franks teaches that it is frequently necessary to insert a narrow-band rejection filter (notch filter) in the transmission path so as to suppress single-frequency interference or to provide a frequency slot for the transmission of sinusoidal synchronizing signals (Page 447, col. 1, Introduction). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Franks and Krasner et al. into the method of Gorman for producing the claimed invention because a notch filter can detect notch noises on the upstream channel.

#### ***Allowable Subject Matter***

4. Claims 3-8, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 9-23 are allowable.

The following is a statement of reasons for the indication of allowable subject matter: As to claims 9-11, the prior art of record does not teach filter connected to the

Art Unit: 2667

demodulator, the notch filter having coefficients that are adjustable to cancel noise applied to the demodulator; a media access controller (MAC) that process binary data and generates for downstream transmission MAP messages that assign time slots in which cable modems may transmit signal bursts on the upstream channel. As to claims 12-16, the prior art of record does not teach compensating for the monitored conditions on the upstream channel; and receiving at the CMTS signal bursts on the upstream channel after such compensation. As to claims 18-23, the prior art of record does not teach compensating for noise on an upstream channel; receiving on the compensated upstream channel a ranging signal from one of the cable modems; transmitting the adjusted coefficients on a downstream channel to the cable modem for the purpose of pre-equalization of the upstream channel.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Boakye whose telephone number is (571) 272-3183. The examiner can normally be reached on M-F from 8:30am to 6:00pm.

Art Unit: 2667


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham, can be reached on (571) 272-3179. The Central Fax number is (571) 273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Electronic Business Center numbers 866-217-9197 and 703-305-3028.

Alexander Boakye

AB

Patent Examiner

07/24/05

  
CHI PHAM  
SUPERVISORY PATENT EXAMINE  
TECHNOLOGY CENTER 2667 7/25/05